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# The Future Role Of Farm Input Suppliers In The Sustainable Agriculture Movement

## **Abstract**

Local farm input supply firms are an important source of information for farmers as they make various input purchase decisions. Farmers consistently rank them high in surveys. The farm input supply firms have been slow to accept the trends toward ( sustainable agriculture. This is changing rapidly. Farm input suppliers will begin to play an increasingly important role in the movement toward sustainable agricultural systems during the 1990s. This is especially true for the Integrated Crop Management approach. There are several important forces driving locally owned farm input suppliers toward increased promotion and use of ICM practices.

## **Disciplines**

Agribusiness | Agricultural and Resource Economics | Agricultural Economics

**THE FUTURE ROLE OF FARM INPUT SUPPLIERS IN  
THE SUSTAINABLE AGRICULTURE MOVEMENT**

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## THE FUTURE ROLE OF FARM INPUT SUPPLIERS IN THE SUSTAINABLE AGRICULTURE MOVEMENT

### ABSTRACT

Local farm input supply firms are an important source of information for farmers as they make various input purchase decisions. Farmers consistently rank them high in surveys. The farm input supply firms have been slow to accept the trends toward sustainable agriculture. This is changing rapidly. Farm input suppliers will begin to play an increasingly important role in the movement toward sustainable agricultural systems during the 1990s. This is especially true for the Integrated Crop Management approach. There are several important forces driving locally owned farm input suppliers toward increased promotion and use of ICM practices.

Government price support policies and pesticide regulations are going to affect their farm customers. Policy changes affecting the farm level will encourage farmers to reduce their production costs and at the same time there will be increased restrictions on pesticide availability and regulations on pesticide use. Farm customers will be searching for viable ways to maintain high yields with reduced expenditures for purchased inputs.

Second, financial pressures within the input supply industry itself will be a driving force encouraging the input-supplier to seek out alternative sources of income. Substandard profits and cash flow exist for about half the firms in the industry. It is likely that these changes will move the industry toward a more service-oriented and less product-oriented mode of operation. This change could be consistent with the aims of sustainable agriculture if the opportunity is grasped.

A third driving force in the 1990s will be the movement away from the production of commodity products toward more specialized products. The movement away from the commodity oriented production systems of the past will involve greater coordination of decisionmaking through the entire market channel -- from input supplier to final consumer. Since a major fraction of input suppliers for agronomic crops are also the first handlers in the market channel they will occupy a critical position in the emergency system. That position will almost certainly involve more consultation and a greater influence on farm input decisions.

At present the retail input supply industry is only beginning to deal with these issues. A recent survey of cooperatively owned input supply dealers indicates that some local input supply firms are already offering ICM services in some form. Others are seriously considering adding such services in the near future.

A key factor in encouraging the transition from a product oriented system to one that centers on Integrated Crop Management (ICM) will be providing assistance to input supply firms in their attempts to implement ICM programs. This will involve not only providing technical assistance to these firms but also increasing the supply of trained people capable of rendering ICM services.

## THE FUTURE ROLE OF FARM INPUT SUPPLIERS IN THE SUSTAINABLE AGRICULTURE MOVEMENT\*

by Roger G. Ginder\*\*

Let me open by saying that I think the theme of this conference--building bridges--is most fitting and appropriate. Unfortunately there has been too wide a chasm between those who support and promote sustainable agriculture and those who retail farm supplies. Both the proponents of sustainable agriculture and the input supply industry have too often taken an extreme position and attempted to paint the other in black. Fortunately that has begun to change, but the concepts of sustainable agriculture are still not as widely understood or accepted by the input supply industry would be desirable. These concepts are still viewed by many locally owned input supply firms with a great deal of suspicion and perhaps confusion.

One has only to read the agribusiness trade literature to get a feel for the confusion that exists about sustainable agricultural concepts such as Integrated Crop Management (ICM) or Integrated Pest Management (IPM), and the role that dealers should play. Not only are there numerous interpretations for these ideas, there are also ongoing debates about the proper roles of government, extension, independent private providers, agribusiness providers, and who should be the provider. To a great degree I think the same confusion exists among farmers.

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It is not my purpose today to even enter into this debate let alone attempt to settle it. It is my firm belief that there are roles for all of these players including agribusiness firms. Most input supply firms have been slow to accept the trends toward sustainable agriculture thus far but that situation will change in the very near future. There are some very strong economic forces propelling the industry in that direction.

#### IMPORTANCE OF FARM INPUT DEALERS TO SUSTAINABLE AGRICULTURE

It might be appropriate to ask the question: Does it really matter whether or not the retail farm input supply sector accepts the concepts of sustainable agriculture? Put differently, why should those who support the concepts of sustainable agriculture care whether or not local input supply dealers buy into the concepts? After all, if the farmers can be convinced, there is simply no need to worry about what dealers think or do?

While this proposition may sound good, it is an approach that could very well result in a much slower adoption of sound sustainable practices than is desirable or necessary. Input farm supply dealers are a very influential source of information in producer decisions about fertilizer and chemical application. Contant and Young in their 1990 study entitled "Evaluation of the Effectiveness of Field Demonstrations" documented the influence of local input dealers as an information source (see table 1).

Contant and Young found that local dealers were used more frequently than any other outside information source for fertilizer decisions by 57% of operators surveyed. Dealers were used by 60% of operators for pesticide use decisions and by 78% of the operators for seed decisions. For disease questions, Extension Service led

Table 1. Percent Use of Selected Information Sources for Certain Farm Operations<sup>1</sup>

	<u>Self</u>	<u>Local Sales Dealers</u>	<u>Field Demos</u>	<u>Extension Service</u>	<u>Ag Chemical Chemicals</u>	<u>Soil Conservation Service</u>
Seed Variety Selection	84%	78%	48%	32%	3%	0%
Tillage	87%	5%	43%	28%	9%	53%
Fertilizer Application	78%	57%	26%	30%	15%	8%
Pesticide Use	61%	60%	21%	36%	45%	1%
Disease	48%	32%	10%	43%	24%	1%

<sup>1</sup> Top three information sources for each farm operation are highlighted.

Source: Effectiveness of field demonstration programs, Contant and Young, 1990.



the group with 43% of the operators but was followed closely by local dealers with 32% of the operators. For tillage questions, Soil Conservation Service was used most frequently (53% of the operators) followed by field demonstrations.

A 1990 Agri Finance survey of farmers (with annual sales over \$100,000) exhibited a similar pattern. About 2/3 of these producers rated a strong relationship with dealers as "Extremely Important" (see table 2). This compared to about 1/4 who rated relationships with crop consultants as "Extremely Important and about 1/5 who rated Ag Extension agents as "Extremely Important".

The responses in these surveys are not unique or unusual. In fact, they confirm results other similar surveys. They do, however, point up the importance of local input farm supply firms in the mix of information provided for farmers' input decisions. Attempts to "wire around" or counteract information dealers provide are likely to require a great deal of effort and even then may meet with limited success.

These data leave little doubt that adoption of sustainable agriculture concepts can be accomplished more rapidly if the local farm input-supply firms are helping to pave the way rather than erecting speed bumps. If dealers can be engaged in the effort to generalize sustainable agriculture concepts there is little to be lost and much to be gained. The real question is "How can it be accomplished quickly and most effectively?"

Locally owned cooperatives and proprietary agribusiness firms are now facing several strong economic forces that I believe will propel the industry toward sustainable agriculture concepts rather than away from them.

Table 2. Percent of Respondents Rating it is "EXTREMELY MPORTANT" to Have a Strong Relationship with the Following People:

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	<u>National Average</u>	<u>Midwest Only</u>
Lender	80%	74%
Accountant	68%	62%
Fertilizer/Chemical Dealer	66%	67%
Veterinarian	42%	45%
Seed Dealer	36%	34%
Lawyer	33%	32%
Crop Consultant	26%	24%
Cooperative Extension Agent	20%	15%
Commodity Broker/Adviser	16%	18%
Professional Farm Manager	9%	6%
Base:	(518)	(347)

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Example: 74% of farmers located in the Midwest rated it "extremely important" to have a strong relationship with a lender.

Those forces are:

1. Trends in government farm policy and environmental policy.
2. Financial conditions within the industry itself.
3. The movement away from commodity oriented marketing and production systems and toward a more processor or end-user oriented systems.

As these forces come to bear on input supply dealers sustainable agriculture concepts such as integrated crop management, integrated pest management and other knowledge or information based criteria for input usage will become more obvious. Lets take a closer look at what is happening in these areas.

#### GOVERNMENT FARM POLICY AND ENVIRONMENTAL POLICY

The trends in the 1980s toward increased environmental awareness have already resulted in significant changes in the way fertilizers and pesticides are handled and applied. This has affected both dealers and farmers. There is little reason to believe these trends will change in the 1990s. It is reasonable to assume that there will be increasing restrictions on pesticide and fertilizer use, increasing levels of competence required for those who apply them, increasing recordkeeping required, and increasing cost associated with their use.

All of these changes will ultimately affect the way farm customers perceive fertilizers and pesticides as production inputs in their individual operations. More and more, farmers will be reevaluating which materials are being applied, how much is applied, when it is applied and where it is applied. Most likely there will also be a reevaluation of who will be applying these materials as well.

But that is only the input side of the equation. Government price support

policies will affect the output side as well. Provisions of the Farm Bill call for decreasing price supports and subsidies. When the prices received for corn, soybeans, and small grains fall, input decisions and strategies are likely to change in response. Per unit production costs must be reduced to moderate the effects of price declines or farmer's total income will fall. Farmers will be under a great deal of pressure to maintain yields while at the same time reducing per unit costs of production of corn, soybeans and wheat.

In the case of corn and soybean production in the western corn belt, one method of accomplishing lower production costs is to reduce the amount spent for chemical fertilizers and pesticides. This is certainly true where those applications may be excess or unnecessary to accomplish realistic yield objectives. For farmers to accomplish reductions in chemical and fertilizer applications (without yield reductions and the increased per unit production costs often associated with yield reductions), changes in management practices will almost certainly be required. Better recordkeeping, different tillage practices, closer crop monitoring, and other similar intensive management practices will be necessary.

Government environmental policies coupled with the changes in price support policies will provide twin incentives for farmers to revise present practices. More stringent regulations and restrictions on pesticides and fertilizers (and the resulting higher cost) will work in tandem with lower output prices and the need to reduce per unit production costs. Both taken together will tend to encourage producers to substitute knowledge, information, and more intensive management practices for some of the chemical pesticides and fertilizers now used. This is especially true where

knowledge and information can be substituted with little or no yield penalty. Producers who do not respond will be caught in the pincers of increasing per unit production costs and decreasing per unit grain prices. Lower profit margins will result.

As we move through the 1990s, input supply dealers will be faced with more and more customers in this position. The task of meeting changing customer needs creates the need for a more service oriented dealer. It creates a need for the supplier to focus on customer profitability rather than product sales volume. Those dealers not adopting knowledge and information based programs to enhance farmer profitability will be out of touch with the customer needs in the 1990s. Dealers who ignore this fact are doing so at their own peril.

#### INTERNAL INDUSTRY FINANCIAL CONDITIONS

Financial conditions within the input supply industry itself will also be a force for change. In Iowa and the western corn belt a large fraction of the input supply firms are also offering grain marketing and storage services. While not all input firms have this combination it is a very common one.

Since the late 1980s, profitability has been severely depressed for a significant portion of the elevator farm supply industry. Although profits have historically been cyclical in this industry the changes in the past three years may foretell a more fundamental change. Financial statements for 1990 from a randomly selected sample of small firms indicate that about half the firms in the industry were experiencing financial stress. To illustrate the nature of the problem, net profits were arranged in descending order and used to classify these firms into two groups--the most profitable half and the least profitable half. Averages for the two groups are shown in table 3 for

Table 3. Comparison of Most Profitable Half of Agribusiness Firms With Least Profitable Half

	Average for most profitable half of <u>sample</u>	Average for least profitable half of <u>sample</u>	<u><math>H_0 \mu_1 = \mu_2^*</math></u>
Total Sales and Service Inc.	22,243,401	7,827,099	S
Grain Sales	17,537,644	5,537,405	S
Dollar Gross Margins	1,723,560	553,468	S
Total Assets	7,135,663	2,396,254	S
Net Profit	264,382	(43,501)	S
Net Cash Flow	554,405	60,168	S

\* S = Significantly different. Reject null hypothesis.  $\alpha = .005$ .

N = Not Significant.

total sales, grain sales, gross margins, total assets, net profit and net cash flow.

The most profitable firms were about three times as large as the least profitable half of firms when measured by total sales, grain sales, dollar gross margins and total assets. These differences between the means for most profitable half and least profitable half were all found to be statistically significant at the 99% level.

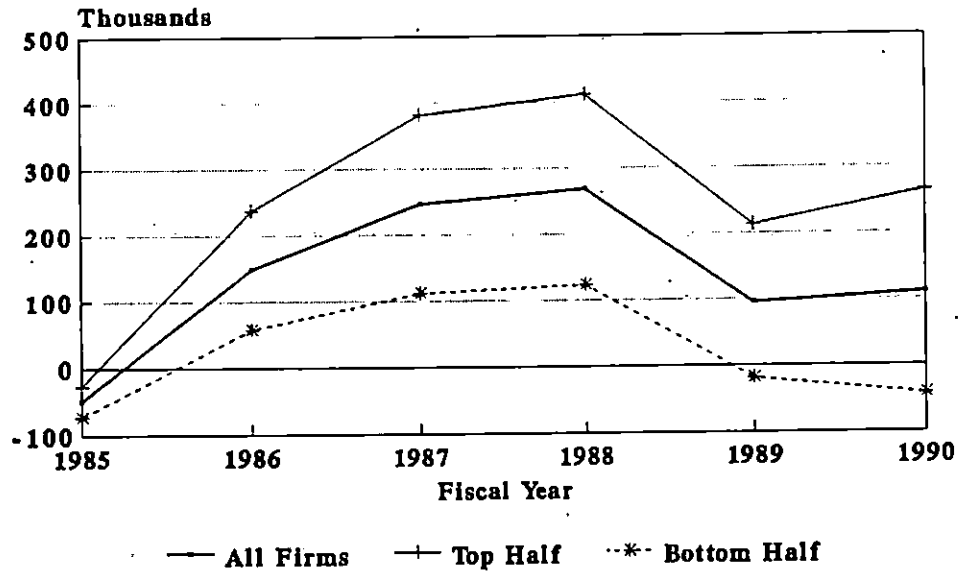
Profits and cash flow, however, depart from the three to one scale. Although the mean profit and cash flow was significantly different, bottom half firms averaged a net loss and averaged only about 10% as much net cash flow as firms in the most profitable half of the industry. This situation is not sustainable in the long run. Approximately 90% of the cash flow in the industry is going to the most profitable firms and only about 10% is going to the remaining 50% in the least profitable group. This implies that the least profitable half of the industry will be less able to service debt, replace fixed assets or use internally generated cash for expansion.

To determine how 1990 top half and bottom half firms have fared over a longer time period, average profits and cash flows were calculated for the six year period 1985-1990. These are shown in figure 3. Panel (A) shows the dollar profits and panel (B) shows the profits per dollar of sales. Showing profits as a percent of sales eliminates the effect of size differences. Prior to 1988, both top half and bottom half firms enjoyed profits and cash flows in rough proportion to their sales and assets. The cash flow was more evenly spread across the industry. This period closely coincided with the period of heavy government storage payments to farmers and elevators.

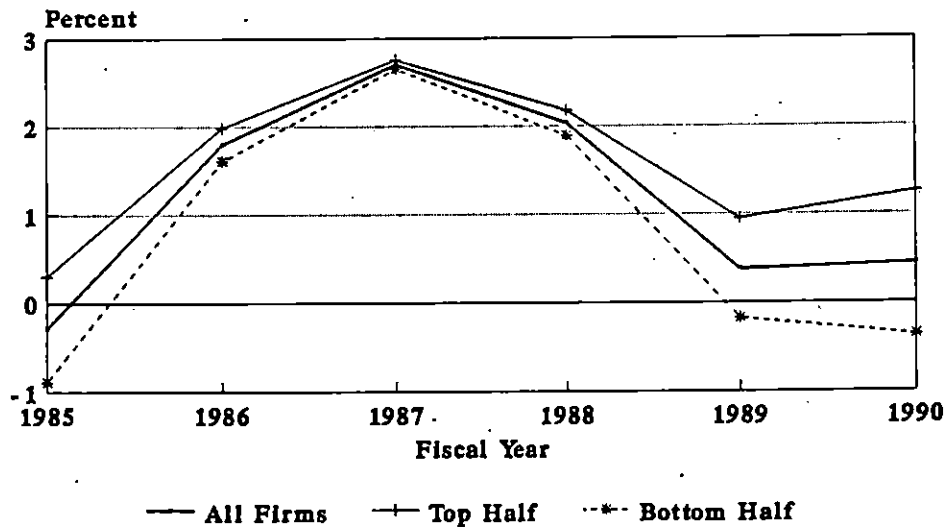
In 1988, when widespread drought in the midwest resulted in a nearly 50%

Figure 3.

A. **Industry Average Dollar Profits  
Top Half Vs. Bottom Half**



B. **Profits as Percent of Sales  
& Other Income  
Top Half vs. Bottom Half**



Source: ISU Econ, Ginder, IGFA Fin Stds Project



reduction in the corn crop, much of the surplus grain in storage was needed to meet normal demand. As a result, the stocks which were being held in storage were suddenly depleted. The storage income generated by local agribusiness firms fell precipitously. The reduction in storage income affected both the most profitable half of the industry and least profitable half.

However, the larger more profitable half of the industry began to show increased profits and cash flow in 1989 and 1990 while the least profitable firms continued to decline. Preliminary analysis of 1991 data indicate that the trend has continued into 1991. Unless there is a change in these divergent trends in the industry profits and cash flow, half the industry is on a collision course with failure.

All firms in the industry--but especially those in the least profitable half--are at a point where they will be looking for ways to adjust operations and increase service income. As they attempt to make adjustments in operations and find niches to replace the lost storage income, integrated crop management, integrated pest management, maintaining identity preserved grains and other similar alternatives to supplement income from current operations will become more attractive.

#### CONTRACT PRODUCTION AND VERTICAL COORDINATION

Trends toward contract production and vertical coordination through the market channel will also have an increasing impact on locally owned agribusiness firms. Historically, crop and livestock products brought to market by U.S. producers have been treated as commodities. Independent farmers have made individual decisions about the amount produced, the genetics used, the inputs used, the timing of marketing, the production practices used, and the facilities or equipment employed.

Commodity markets, processors, and final consumers have absorbed whatever quantity and quality farmers as a group chose to put on the market. Price adjusted to provide signals to producers to either increase or decrease quantities produced. Farmers absorbed the risk and reaped the profits or loss.

This commodity oriented system of production and marketing appears to be changing and the rate of change is expected to accelerate during the next decade. Advances in genetics will now permit farm product characteristics to be more closely tailored to intermediate user and final consumer needs. Rather than accept the wide range of product characteristics that prevail when hundreds of thousands of producers make independent decisions about the genetics used, inputs used, production practices used and equipment used there will be an increasing trend toward coordination of these production decisions. In many cases, this coordination will be done through production contracts specifying practices to be used.

The objective of coordination will be to tailor final product characteristics more closely to processor needs and/or the demands of final consumers for specific attributes. For example, final consumers may wish to have pork chops with lower fat content, and more consistent size, shape, and flavor. Pork processors may wish to have carcasses that are uniform enough to permit automated machinery to be used in slaughter and processing. Such consistency and uniformity cannot be achieved economically (or easily) given the large number of uncoordinated production decisions. Genetics, production practices and even the inputs used must be standardized over time in order to achieve and maintain the desired set of product attributes. The changes are already being made in the livestock and meat sectors.

Similar forces are at work in the markets for grains. Physical attributes such as fewer stress fractures, better physical integrity and proper moisture content in corn kernels can make a significant difference in quality of grain during shipping and handling. Likewise intrinsic attributes or components such as oil content, protein content, and starch content may have much different values to different processors and end users.

To provide these values to customers, production practices such as fertilizer levels, pesticide applications, drying practices, harvesting methods, seed selection, and other similar activities will need to be more closely controlled and standardized. If these values are to be provided, the grain cannot be co-mingled as a bulk commodity the way it is today. Instead, it will need to be kept in smaller lots of grain with similar characteristics.

As these changes materialize there will be an increased level of involvement by local input supply dealers in decisions about production practices. This is especially true where the local dealer is also the market for the product. Where specific raw product characteristics are desired and the products are produced under contract with a local elevator supply firm there will be more frequent contact between the dealer and the farmer. A wide variety of practices may be specified in contracts including genetics, tillage, the amount and timing of fertilizer and chemical applications, harvesting practices and drying.

This presents an excellent opportunity for the implementation of many of the tillage, fertilizer, agricultural chemical, and crop monitoring concepts underlying sustainable agriculture. In order to hold down costs and produce the desired results

production practices will be more intensely managed and more closely monitored. Greater emphasis will need to be placed on information based input and tillage decisions and less emphasis on prophylactic input applications. The contracting elevator as well as the farmer will have an incentive to eliminate the costs of unnecessary applications. This incentive is especially strong when the contracting elevator uses the grain as a feed ingredient.

At the present time, this type of production represents only a small fraction of corn and soybeans produced. Although it is not expected to displace bulk grain, steady increases are expected during the decade. Production of grains tailored for use in livestock feeds are likely to be imported in Iowa. Several local Iowa cooperatives either now have such programs in place or will be starting them in the coming year. At least one of these companies requires the use of the CENTROL IPM service as a precondition for entry into their program.

The anticipated growth in demand for crops having specific attributes to meet the special needs of end users puts the elevator-farm supply firm in a strategic position to encourage implementation of important sustainable agriculture practices. The added management intensity required to produce end products with specialized attributes is likely to permit a more targeted use of inputs at a very low marginal cost.

#### STATUS OF CURRENT DEALER PROGRAMS

As stated previously integrated pest management and integrated crop management have not been widely adopted by local input supply firms. A minority of the firms in the industry are now offering programs consistent with sustainable agriculture. A study of local cooperatives was conducted by Eileen Gannon Williams

during the summer of 1991. The Gannon Williams mail survey questionnaire was completed and returned by 2/3 of the cooperatives in Iowa. In the survey the definition of Sustainable Agriculture in GPA 1987 was provided to respondents. Questions were asked to determine the perceptions of local managers about sustainable agriculture, current programs in place and plans for implementing programs in the future.

About 25% of the respondents indicated that they were offering some type of Integrated Crop Management or Integrated Pest Management program. Those offering ICM services were heavily weighted toward the largest sales category. Nearly 70% of the responding cooperatives with annual sales volume greater than \$30 million were offering ICM service. Only 15-25% of cooperatives in lower annual sales categories offered an ICM service. This implies that a targeted educational and technical assistance effort may need to be focused on the smaller firms. The survey showed that although only about 25% of cooperatives were now offering ICM, about an additional 31% would definitely offer such a service if they could break even or earn a modest profit. Nearly all of the remaining 42% said they would possibly offer ICM services if they could break even or earn a modest profit.

Respondents were asked which services they plan to offer in the next three years. About 15% definitely plan to offer ICM or IPM services and about 65% say they possibly would offer such services. About an equal percentage of the firms are already offering these services. Thus, in three years, about 30% of the respondents will be offering these services if things go according to plan.

Livestock consulting services are now being offered by about 38% of those

responding and an additional 16% said they definitely plan to add these services during the next 3 years. This would bring the total to more than 50% by 1995. Manure brokerage is not now widely offered and few have definite plans to do so. Only about 25% considered it a possibility within the next three years.

The majority of the respondents said they definitely plan to provide assistance to help farmers stay in compliance with regulations. Assistance in meeting reporting requirements and accurate recordkeeping of how, when, and where materials have been applied would be part of this process. Respondents were also asked about the types of external support they need to start offering more ICM programs. Workshops, manuals, computer programs, access to trained personnel and individualized hands-on training were all noted by a high proportion of the sample as important needs.

A similar study of investor owned input supply firms should also be conducted. But these responses indicate that there is a critical need for technical assistance in establishing knowledge and information based programs in agribusiness firms. The constraints must be eliminated as quickly as possible to permit widespread adoption of ICM programs in local input supply firms.

## CONCLUSIONS

Farm input suppliers heavily influence producer decisions. The local input supply industry has been slow to accept the trends toward sustainable systems. This is likely to change rapidly in response to three strong economic forces now at work. Policies increasing the regulations and restrictions on use combined with lower price supports will encourage farmers to reduce commercial pesticide and fertilizer applications. They will be seeking less product and more management and consulting

services. At the same time financial conditions in the industry will force input supply firms to new sources of revenue. Knowledge and information based crop services are one such alternative.

Greater vertical coordination in the grain industry will create a need for more intensive management during the production process. Many sustainable agricultural practices could be easily and economically incorporated.

These factors appear to favor a significant future role for farm input suppliers to play in offering and promoting ICM and IPM services. Every effort should be made to eliminate the constraints that might retard this change.

#### REFERENCES

"How Farmers View Lenders: A Special Report." Agri Finance Magazine, October 1990.

Baumel, C. P. and R. W. Wisner. "Excess Grain Capacity and Outlook for the 1990s." ISU Econ. Misc. Paper, January 1992. (Available from Dept. of Econ., ISU, Ames.)

Contant, C. K. and Cathy L. Young. "Evaluating the Effectiveness of Field Demonstration Programs." IFM #6, Iowa State University, May 1990.

Ginder, R. G. "Assessment of the Financial Impact of Chemical Mixing and Washing Site Remediation in Iowa." Testimony to Iowa Legislature Study Committee, Nov. 1991. (Available from Dept. of Econ., ISU, Ames.)

Ginder, R. G. "Current Conditions Facing Locally Owned Iowa Agribusiness Firms and Strategies for Adjustment." Testimony to Iowa Legislature Committee on Family Farm and Small Business Preservation. October 28, 1991. (Available from Dept. of Econ., ISU, Ames.)

Urban, Tom N. "Agricultural Industrialization: Its Inevitable." Choices Magazine, Fourth Quarter, American Agricultural Economics Assn., December 1991.